

### **REMARKS**

The Office Action dated March 6, 2007, has been received and carefully noted. The following remarks, are submitted as a full and complete response thereto.

Claims 1-40 are currently pending in the application, of which claims 1, 18, and 24 are independent claims. Claims 1-40 are respectfully submitted for consideration.

Claims 1-40 were rejected under 35 U.S.C. 102(e) as being anticipated U.S. Patent No. 6,925,259 of Boroditsky et al. ("Boroditsky"). Applicants respectfully traverse this rejection.

Claim 1, upon which claims 2-17 depend, is directed to a communications node for an optical network. The communications node includes a tunable wavelength receiver for receiving optical data from source nodes at a plurality of source wavelengths. The communications node further includes a tunable wavelength transmitter for transmitting optical data to destination nodes at a plurality of destination wavelengths. The communications node additionally includes a media access controller which schedules transmission to and receipt from a plurality of nodes at a plurality of time-slots and wavelengths according to at least one reservation map.

Claim 18, upon which claims 19-23 depend, is directed to a media access controller for a network. The media access controller includes a reservation map unit which creates the at least one reservation map for reserving time slots and wavelengths for transmitting data to and receiving data from a plurality of nodes, made up of the source nodes and destination nodes, based upon available time slots and wavelengths in

the network. The media access controller also includes a demand matrix generating unit for generating a demand matrix based upon the demand data from the plurality of nodes in the network. The reservation map is based upon said demand matrix.

Claim 24, upon which claims 25-40 depend, is directed to a method for communicating optical data on an optical network. The method includes receiving optical data from source nodes at a plurality of source wavelengths at a tunable wavelength receiver. The method also includes transmitting optical data to destination nodes at a plurality of destination wavelengths from a tunable wavelength transmitter. The method further includes controlling the tunable wavelength receiver and the tunable wavelength transmitter, via a media access controller by scheduling transmission to and receipt from a plurality of nodes at a plurality of time-slots and wavelengths according to at least one reservation map.

Applicants respectfully submit that Boroditsky fails to disclose or suggest all of the elements of any of the presently pending claims.

Boroditsky generally relates to a high-capacity packet-switched ring network. Boroditsky, at column 2, lines 1-41, describes a node 200 of a network that employs wavelength stacking. The node 200 includes a fast tunable laser 202 that can create a composite packet in contiguous time slots at three different wavelengths. The node 200 can also include a detector 216, such as a photodiode, for extracting data from an unstacked packet from a wavelength demultiplexer 206.

Claim 1 recites “a media access controller which schedules transmission to and receipt from a plurality of nodes at a plurality of time-slots and wavelengths according to at least one reservation map.” Boroditsky fails to disclose or suggest at least this feature.

The Office Action took the position that this feature is disclosed at column 3, line 1 et seq. and Table 1, and particularly node 200 and Figure 3. The Office Action stated that Boroditsky “teaches that node 200 schedule[s] transmissions via reserved wavelengths and time slots by a MAC protocol....” The Office Action’s apparent position is that this disclosure implicitly teaches a media access controller, since it is clear that there is no element in Boroditsky that is identified as a media access controller.

The claimed controller, however, does not just schedule transmission of wavelengths but also schedules receipt from a plurality of nodes at a plurality of time slots. The Office Action does not even discuss these features of claim 1. Thus, for at least this reason, it is respectfully requested that the rejection of claim 1 be withdrawn.

Additionally, the claimed media controller schedules “according to at least one reservation map” as recited in claim 1. The Office Action took the position that Figure 3 and/or table 1 correspond to the claimed reservation map. Applicants respectfully disagree.

Figure 3 is a timing diagram for a three wavelength packet, it is not a reservation map according to which a media access controller schedules to and receipt from a plurality of nodes (compare, for example, Figures 6 and 19 of the present application). Likewise, Table 1 is a table that shows guaranteed transmitter ( $\rho_T$ ) and link ( $\rho_L$ )

utilization for different node to wavelength (N/W) ratios, which does not correspond to a reservation map in any way.

Accordingly, Boroditsky fails to disclose or suggest “a media access controller which schedules transmission to and receipt from a plurality of nodes at a plurality of time-slots and wavelengths according to at least one reservation map,” as recited in claim 1. Thus, for at least this additional reason, it is respectfully requested that the rejection of claim 1 be withdrawn.

Independent claim 18 likewise recites “a reservation map unit which creates the at least one reservation map.” As noted above, there is no discussion in Boroditsky of a reservation map, and there is certainly no discussion in Boroditsky that the node 200 creates a reservation map. Furthermore, the distinctions set forth above with respect to claim 1 also apply to claim 18. Thus, for at least this similar reason, it is respectfully requested that the rejection of claim 18 be withdrawn.

Claim 18 further recites “a demand matrix generating unit for generating a demand matrix.” Boroditsky fails to disclose or suggest at least this further feature of claim 18, and the Office Action fails even to address this feature. Thus, for at least this further reason, it is respectfully requested that the rejection of claim 18 be withdrawn.

Independent claim 24 has its own scope, but the distinctions raised above with respect to claim 1 also show the patentability of claim 24, and it is to be observed that claim 24 was not separately rejected. Accordingly, the rejection of claim 24 is

respectfully traversed for the same reasons claim 1 is traversed, and withdrawal of the rejection of claim 24 is respectfully requested.

Claims 2-17, 19-23, and 25-40 depend respectively from, and further limit, claims 1, 18, and 24. Accordingly, it is respectfully submitted that each of claims 2-17, 19-23, and 25-40 recites subject matter that is neither disclosed nor suggested in the cited art. It is consequently requested that the rejection of claims 2-17, 19-23, and 25-40 be withdrawn.

In addition to being novel with respect to Boroditsky, the claims of the presently pending application are also non-obvious with respect to Boroditsky. Boroditsky relies on a system that includes optical delay lines (Figure 1: 204, 206, 208, 210, 212, 206 and 214) that are matched to the time-slot-duration ( $T_p$ ). Such system design has at least one fundamental problem: since optical ring synchronization requires integer number of time-slots on the ring, and the actual ring-length varies between different deployments, the synchronization effectively requires that the time-slot-duration will vary from one deployment to another. Thus, since Boroditsky relies on fixed optical delay lines the system must be customized for each deployment. Moreover, if the ring-length changes due to environmental changes (temperature, humidity) or physical changes (fibers change) it will not work anymore (since  $T_p$  will no longer be equal to the actual slot duration).

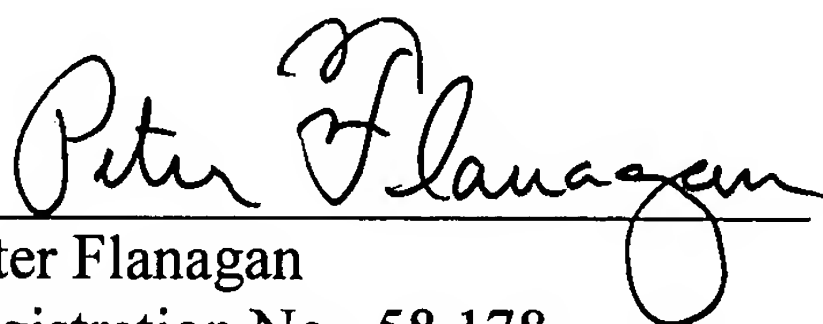
In contrast, certain embodiments of the present invention advantageously employ remarkably innovative concepts, which are both more practical and much cheaper, in part

because they do not need any optical delay lines. These embodiments automatically adapt the time-slot-duration to cancel time-slots that are overlapping while an algorithm adjusts the allocation accordingly. Thus, certain embodiments of the present application can provide critical and unobvious advantages over the cited art.

For the reasons set forth above, it is respectfully submitted that each of claims 1-40 recites subject matter that is neither disclosed nor suggested in the cited art. It is, therefore, respectfully requested that all of claims 1-40 be allowed, and that this application be passed to issuance.

In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

  
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